

## A new species and a new combination in *Rutidosis* (Gnaphalieae: Angianthinae: Asteraceae).

A.E. Holland

### Summary

Holland, A.E. (1999) A new species and a new combination in *Rutidosis* (Gnaphalieae; Asteraceae). *Austrobaileya* 5(3): 565-572. A new species, *Rutidosis glandulosa* A.E.Holland, is described and illustrated with details on habitat and conservation status. A new combination, *R. helichrysoides* subsp. *acutiglumis* (Philipson) A.E.Holland, is made with notes on the variation and distribution of *R. helichrysoides*. A key to the species of *Rutidosis* is given.

Keywords: *Rutidosis*, *Rutidosis glandulosa*, *Rutidosis helichrysoides* subsp. *acutiglumis*, *Rutidosis helichrysoides* subsp. *helichrysoides*.

Ailsa E. Holland, Queensland Herbarium, Brisbane Botanic Gardens Mt Coot-tha, Mt Coot-tha Road, Toowong Qld 4066, Australia. email: Ailsa.Holland@env.qld.gov.au

### 1. *Rutidosis glandulosa* A.E.Holland, sp. nov.

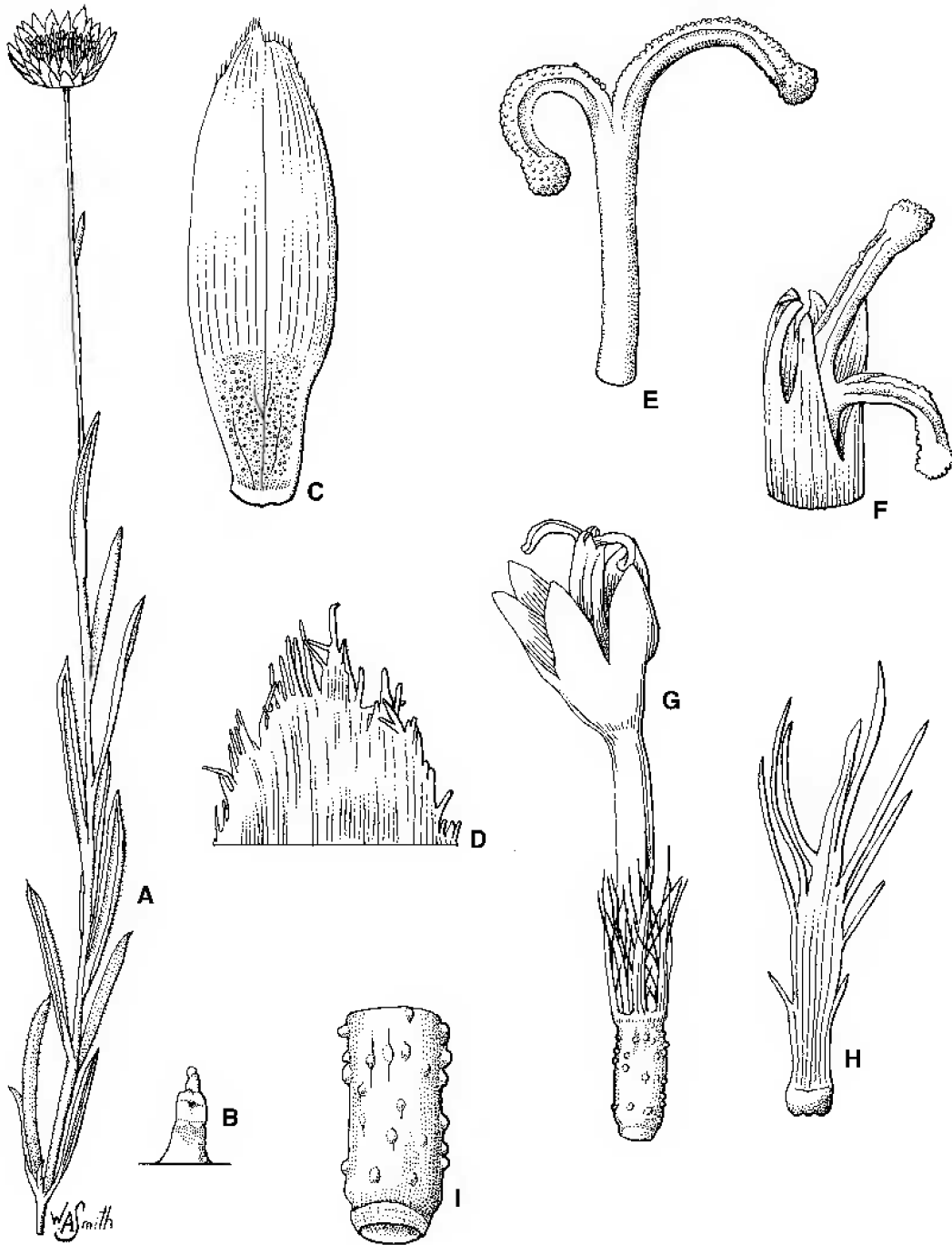
Species affinis *R. murchisonii*, a plantis dense glandulosis pilosis, bracteis involucrentibus ciliatis ad apicem, pappi squamis linearibus, longioribus (1.5–2.5 mm longis), angustioribus (c. 0.2 mm latis) differt. **Typus:** Queensland. LEICHARDT DISTRICT: Blackdown tableland, c. 32 km SE of Blackwater, campsite on Mimosa Ck, Apr 1971, *R.J.Henderson* 628, *S.B.Andrews* & *P. Sharpe* (holo: BRI; iso:CANB, MEL).

*Rutidosis* sp. (Blackdown Tableland K.A. Williams 79082), Schedule (Jan. 1998) of the Queensland Nature Conservation Act 1992, p. 10; R.J. Henderson, Queensland Plants, Names & Distribution, p. 32 (1997).

Erect or ascending herb with a woody base. Stems often branched from base, 13–30 cm long, densely glandular hairy; hairs variable in length, very short (2-celled) to longer (several cells, 2-celled at apex). Leaves sessile, linear to narrowly obovate, 9–70 mm long, 1.5–5 mm wide, acute and apiculate at apex; margins entire and usually recurved; both surfaces densely glandular hairy, green, with 1 vein. Peduncles

2–7 cm long, distantly scaly, densely glandular hairy. Capitula hemispherical, 9–21 mm diam., with several rows of involucrent bracts and 30–70 florets. Outer involucrent bracts sessile, ovate, 1.5–7 mm long, 2–4 mm wide, acute and ciliate at apex with cilia up to 0.5 mm long; lamina scarious, smooth, golden brown; lower part glandular, with an obovate stereome c. 1 mm long and wide, with a narrow margin. Inner bracts similar, lanceolate to linear, 5–8 mm long, 1–2 mm wide; lower part claw-like, with stereome 2–3 mm long, 1–1.5 mm wide. Florets  $\pm$ equalling the involucrent bracts, mainly bisexual with a few female outer florets. Corolla 4–5.5 mm long, yellow, glabrous; lower part of tube narrow, upper part slightly wider, 1.5–2 mm long, 0.7–1 mm wide; lobes 5, triangular, 0.7–1.2 mm long. Anthers c. 1.5 mm long; apex narrowly triangular, c. 0.2 mm long, tails absent. Style arms truncate, 0.5–1 mm long (–1.5 mm long in female florets), papillose at apex. Cypselas obovoid, truncate at apex, 1–1.4 mm long, 0.5–0.7 mm wide, dark brown, glabrous, shiny; the surface covered with large translucent 2-celled papillae; vascular strands 2. Pappus scales 8–11, linear, 1.5–2.5 mm long, c. 0.2 mm wide, tapered to a fine point at apex, ciliate with long hairs, shiny, white. Fig. 1.

**Specimens examined:** Queensland. LEICHARDT DISTRICT: Gwambagwine, Ruined Castle Ck catchment, Sep 1995, *Forster* PIF17825 et al. (BRI); Blackdown



**Fig. 1.** *Rutidosia glandulosa*: A. flowering stem x 1. B. leaf gland x 40. C. involucre bract x 10. D. apex of involucre bract x 30. E. style arms x 40. F. anther apices x 40. G. floret with cypsela and pappus scales x 15. H. pappus scale x 40. I. cypsela x 40. (from *R.J.F.Henderson* 628, BRI).

Tableland, c. 32 km SE of Blackwater, campsite on Mimosa Ck, Apr 1971, *Henderson* 628 et al. (BRI, CANB, MEL); Blackdown Tableland, May 1981, *Pearson* 189 (BRI); Blackdown tableland near Mimosa Ck, Sep 1979, *Williams* 79082 (BRI). DARLING DOWNS DISTRICT: Barakula, Nov 1979, *Hando* 120 (BRI); Barakula State forest near Chinchilla, Feb 1986, *Robinson* 860196 et al. (BRI); Thulimbah, without date, *Schindler* s.n. (BRI).

**Distribution and habitat:** This species has been collected from four disjunct localities in Queensland, viz: Blackdown Tableland, Gwambagwine, Barakula State Forest (near Chinchilla), and Thulimbah near Stanthorpe (probably no longer extant at this locality). It occurs on sandy or gravelly well drained soil in grassy open *Eucalyptus* woodland. Map. 1.

**Conservation status:** *Rutidosia glandulosa* is presently listed as Rare in the 1998 Schedule of the Queensland Nature Conservation Act 1992. The population at Barakula comprised fewer than 50 plants at the time of collection, growing alongside a forestry track. The Thulimbah population (*Schindler* s.n.) has not been relocated. The populations at Gwambagwine and Blackdown Tableland consist of several hundred plants (P.I. Forster, pers. comm., 1998).

**Note:** This species most closely resembles *R. murchisonii* but differs mainly in the dense vestiture of glandular hairs; woolly hairs are absent. It is also distinguished by the involucre bracts which are ciliate at the apex and by the pappus scales which are linear, 1.5–2.5 mm long and c. 0.2 mm wide. *R. murchisonii* has woolly hairs at least on the lower surface of the leaf, and lacks glandular hairs. The involucre bracts are entire, and the pappus scales are obovate, 1–1.5 mm long and more than 0.2 mm wide.

This new species occurs further west than *R. murchisonii*, its present distribution overlapping that of *R. murchisonii* between Roma and Chinchilla (see Map 1).

**2. *Rutidosia helichrysoidea* DC., Prodr. 6: 159 (1838). Type:** New South Wales. "In Novae-Hollandiae Molle's-Plains prope Lachlan flumen julio flor. legit", *A. Cunningham* (holo:G-DC; iso: K [photo at BRI]).

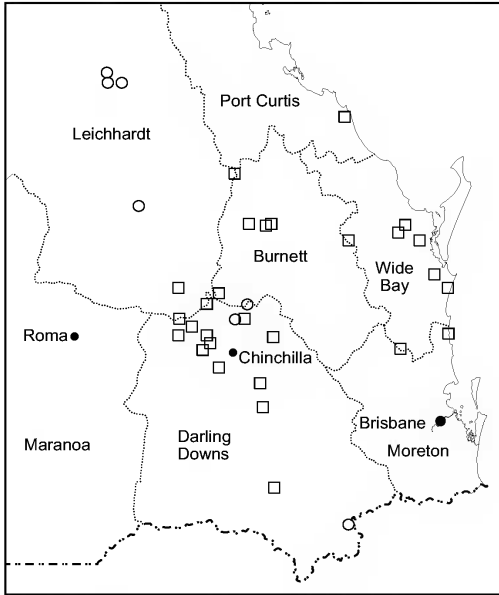
*R. auricoma* F. Muell., *Linnaea* 25: 408 (1853).

**Type:** "Ad margines rivulorum exsiccantium lapidosos montium prope Cudnaka", n.v., fide Bentham, *Fl. Aust.* 3: 594 (1866).

Erect herb 25–60 cm tall with a woody base. Stems branched, densely to sparsely white woolly hairy. Leaves mostly cauline, alternate, sessile, linear to oblong or oblanceolate (lowest ones obovate), 0.6–9.0 cm long, 2–20 mm wide; apex acute or obtuse, often apiculate; margins recurved or flat; lamina sparsely to densely white woolly hairy on both surfaces, denser below, 1-veined, lowest leaves often 3-veined. Peduncles 0.5–7 (–15) cm long, sparsely to densely white woolly hairy, distantly scaly. Capitula broadly hemispherical, 6–20 mm diam., with several rows of involucre bracts and 50–200 florets. Outer involucre bracts sessile, ovate to lanceolate, 4–7 mm long, 0.4–2.2 mm wide, acute at apex, entire or with cilia up to 0.6 mm long; lamina strongly or slightly transversely wrinkled or flat, scarious, translucent, golden or pale brown; lower part, with a flat obovate stereome 0.5–2.0 mm long, 0.3–1.2 mm wide, glandular, with or without a narrow margin. Inner bracts similar, lanceolate to linear, 5–7 mm long, 0.3–2 mm wide, narrowly tapered to a long point at apex; lower part claw-like with stereome 1–3 mm long, 0.3–0.7 mm wide. Florets equal to or longer than the involucre bracts, all bisexual. Corolla 3–4 mm long, bright yellow or golden, glabrous; lower part of tube narrow; upper part of tube dilated, 1–1.5 mm long, c. 0.7 mm wide; lobes 5, triangular, 0.7–1.0 mm long. Anthers 1.1–1.3 mm long; apex ovate c. 0.2 mm long; tails absent. Style arms truncate, 0.2–0.6 mm long, papillose at apex. Cypselas narrowly obovoid, obliquely truncate at apex, 0.6–1.3 mm long, 0.3–0.5 mm wide, light or dark brown, glabrous, shiny, the surface covered with large 2-celled papillae; vascular strands 2. Pappus scales 5–12, obovate to spatulate, 0.8–1.4 mm long, 3–6 mm wide, rounded or truncate at apex, entire, shiny, white or cream.

**Variation in *Rutidosia helichrysoidea*** W.R. Philipson (1937) distinguished his species, *Rutidosia acutiglumis* from *R. helichrysoidea* DC. by "the numerous narrow outer involucre bracts and the lanceolate and

paleaceous apices of the inner bracts. In *R. helichrysoides* the bracts are ovate with a ciliate margin and are golden brown.” An



Map 1. Distribution of *R. glandulosa*, and *R. purchisonii*.

investigation into the variation of involucre bract characters showed that size, shape, margin, colour and wrinkling of the lamina are variable across the entire range of these taxa (see Fig. 2).

Bract widths (of widest bracts) were measured for

Two subspecies are recognised:

Involucre bracts usually 0.8–1.5 mm wide, brown to golden yellow, strongly horizontally wrinkled, with cilia usually more than 0.2 mm long . . . . . ***R. helichrysoides* subsp. *helichrysoides***

Involucre bracts 0.2–0.8 mm wide, pale brown, smooth or very slightly horizontally wrinkled, entire or with short cilia less than 0.2 mm long . . . . . ***R. helichrysoides* subsp. *acutiglumis***

***Rutidosia helichrysoides* subsp. *helichrysoides***

Capitula with involucre bracts usually 0.8–1.5 mm wide; lamina transversely wrinkled, brown or golden yellow, with cilia up to 0.6 mm long.

**Selected specimens:** **Western Australia.** Carnegie Stn, ENE of Meekatharra, July 1967, *Beard* 4811 (PERTH); Near E end of Schwenin Mural Ct, July

60 specimens from across Australia (see Fig. 3). Two groupings occur, corresponding to the two taxa described as subspecies below. Many of the Queensland specimens have narrow, entire, pale bracts with little or no wrinkling (*R. helichrysoides* subsp. *acutiglumis*), while those further south have variously wide to narrow bracts, different degrees of wrinkling and short or long cilia (*R. helichrysoides* subsp. *helichrysoides*). Intermediates occur in the Gregory South District of Queensland and in north-eastern South Australia at Coongie and in the Northern Territory. These intermediates have narrow involucre bracts (0.5–0.8 mm wide) with a wrinkled lamina and marginal cilia to 0.3 mm long. eg. *D.E.Boylard* 182, *Henderson & Boyland* H2114, *Halford* 2678A, *Williams* 8054, *Jackson* 1991 and *O’Malley* 169. A few specimens from the Northern Territory have bracts as wide as the southern specimens (1.0–1.4 mm wide), but with a smooth entire lamina eg. *Barrit* 21 and *Nielson* 428.

Specimens from the southern part of South Australia have dense inflorescences with smaller capitula on shorter peduncles, often crowded together. This form is not recognised as a distinct taxon here. The name *R. panniculata* E.Pritzel (Feddes Rep. 15 (1918), Type: Central Australia, 1903, *Basedow* 20) may be associated with this part or the variation but I have been unable to locate the type material to confirm this.

1974, *George* 12098 (CANB); Near Rudall R., May 1971, *George* 10681 (CANB, PERTH); 67 miles [107 km] E of Warburton, July 1963, *George* 4734 (PERTH); 35 miles [56 km] SE of Windulda, Warburton Rd, Aug 1962, *George* 4023 (PERTH); 4 miles [6.4 km] W of Mt Tietkens, northern Gibson Desert, July 1967, *George* 8962 (PERTH); Mt Malcolm, July 1899, *Fitzgerald* s.n. (PERTH); Mt Windell Rd corridor, 8 km NW of Mt Windell, Mar

1992, *van Leeuwen* 1114 (PERTH); 10 km W of Juna Downs HS, Jan 1989, *Mitchell* 1707 (PERTH); 28 miles [44.8 km] SE of Gordon Downs Stn, July 1949, *Perry & Lazarides* 2489 (AD, BRI, PERTH); Jigalong Depot, May 1947, *Royce* 1533 (PERTH); E of Warburton Mission on road from Kalgoorlie to Ayers Rock, May 1959, *Vollprecht* 43 (PERTH); Newman, July 1980, *Walker* 4 (PERTH); Rudall R. area, Aug 1971, *Wilson* 10568 (PERTH). **Northern Territory.** Atcherie Ck crossing by Ammaroo-Ilkedra Rd, c. 3.7 km by road N of Honeymoon Bore, Aug 1978, *Barker* 2802 (AD); Kulgera, Nov 1955, *Burbidge & Alsray* 4584 (AD, CANB); 0.7 km E of the Sandover Hwy on the Plenty Hwy, Sep 1982, *Chinnock* 5538 (AD); 66 miles [105.6 km] NW Willowra HS, Dec 1965, *Chippendale* 4812 (AD, CANB, DNA); 1 mile [1.6 km] E No. 6 Bore, Manner's Ck, Oct 1955, *Chippendale* 1789 (AD); ); 19 miles [30.4 km] SE Bottom Bore, Hale R., Jan 1966, *Chippendale* 4939 (AD, CANB, DNA); Mulga Park Stn, Apr 1974, *Henshall* 182 (AD); Peterman Ranges Area, Apr 1972, *Latz* 2405 (DNA); Goose R., McLaren Ck Stn, Sep 1983, *Latz* 9812 (DNA); 20 miles [32 km] SW of Lucy Ck Stn, Sep 1956, *Lazarides* 5906 (CANB); 11.5 miles [18.4 km] SE of Alice Springs Township, Aug 1956, *Lazarides* 5713 (AD, CANB); Charley Ck c. 60 miles [96 km] NW of Stuart Highway along Yuendumu Rd, Sep 1968, *Maconochie* 595 (AD); 90 miles [144 km] W Stuart Hwy, Yuendumu Rd, July 1968, *Must* 301 (AD); 20 miles [32 km] N of Aileron, June 1962, *Nelson* 428 (AD, BRI); Phillip Ck, c. 46 km N of Tennant Ck, July 1968, *Orchard* 909 (AD); By west base of Ayers Rock, c. 350 km SW of Alice Springs, Aug 1957, *Schodde* 404, (AD, CANB). **South Australia.** 7.5 km N of Screechowl Ck, 12 km SW of Alberrie Ck Rd, Finnis Springs Stn, Aug 1990, *Badman* 4303 (BRI); Wimbrinna Dam, Gregory Ck, Stuart Ck Stn, Aug 1989, *Badman* 3548 (AD); Kingoonya-Mt Eba, East West Railway C'mm'th Hill, Apr 1917, *Basedow* 33 (NSW); Eyre Basin, Arckaringa, July 1989, *Bates* 19167 (BRI); Coongie sandhills, Oct 1986, *Conrick* 1953 (AD); Mt Carmeena, c. 25 km WSW of Everard Park HS, Sep 1963, *Eichler* 17511 (AD); Koodnanaie Ck, Birdsville Ck, Sep 1960, *Filson* 3310 (AD); 104 miles [166.5 km] S of Birdsville, 47 miles [75.6 km] N of Mirra Mitta Bore, Sep 1979, *Grandison* 161 (AD); \*Warburton R., near New Kalamurina Stn, Mar 1972, *Jackson* 1991 (AD); Near Warburton R., c. 11 km SW of New Lalamurina, Aug 1975, *Jessop* 2022 (AD); Mt Lyndhurst, Sep 1998, *Koch* 135 (NSW, PERTH); 32 km NE of Innamincka, Aug 1968, *Kuchel* 2558 (AD); \*Coongie Lakes, NW branch of Coopers Ck, Jan 1987, *O'Malley* 169 (AD); 15 km SW of Dickina Hill, Pandie Pandie Stn, May 1987, *Reid* 814 (AD); Lagoon Waterhole, Quadrat MC61 Lake Eyre, Sep 1988, *Robinson* 919 (BRI); Everard Range, Sep 1968, *Spooner* 154A (AD); Lake Gairdner area, near Kingoonya, Sep 1967, *Spooner* 201 (AD); W of Dalhousie Springs complex, Red Mulga Ck 6.4 miles [10.4 km] W of Witchery Mound, Sep 1974, *Symon*, 9382 (AD); 18 miles [28.8 km] S of Mt Hopeless outstation, Aug 1968, *Symon* 5938 (AD); 45 km NNW of Innamincka along track on sandy plain, Aug 1975, *Weber* 4705 (AD);

Watchiepandrinie Ck, 15.5 km W of Innamincka, May 1976, *Williams* 8132 (AD). **Queensland.** WARREGO DISTRICT: 20 miles [32 km] E of Cunnamulla, Sep 1963, *Phillips* s.n. (BRI). **New South Wales.** North Mandelman Paddock, Fowlers Gap near Broken Hill, Oct 1975, *Jacobs* 2208 (NSW); Calindary Stn, Apr 1967, *Libke* 24570 (CANB); Environs of Cobar, Nov 1969, *McBarron* 18485 (NSW); New Clunie, c. 27 km W of Louth, Apr 1967, *Moore* 4967 (NSW); Pelora c. 60 km NW of Loath, Oct 1989, *Moore* 7951 (NSW); Gemanna, Oct 1988, *Moore* 8921 (BRI, NSW); 1.5 km NE Wonga, May 1972, *Pickard & Benson* 1840a (NSW); Mt Wood Hills, Sturt N.P., Sep 1989, *Reilly* 05/JR (NSW); Peery, NE of White Cliffs, Mar 1975, *Stanley* 1632 (NSW). **Tasmania.** Mt Brown, 32 km NE Hobart, May 1898, *Tate* s.n. (AD).

\* These specimens have some intermediate characteristics (see discussion on variation).

**Distribution and habitat:** *R. helichrysoides* subsp. *helichrysoides* is found throughout inland Australia, in all mainland states across 17 degrees of latitude, in a wide variety of habitats (Fig. 2).

**Phenology:** Flowers throughout the year depending on rainfall.

**Rutidosis helichrysoides** subsp. **acutiglumis** (W.R.Philipson) A.E.Holland, **comb. nov.**

*R. acutiglumis* Philipson, J. Bot. 76: 316 (1937). **Typus:** Queensland. LEICHHARDT DISTRICT: Marathon Station, West of Hughenden, *Hubbard* 7772 (holo: K, photo: BRI).

Capitula with involucre bracts less than 0.8 mm wide, flat or slightly wrinkled, pale brown, entire or with very short cilia less than 0.2 mm long.

**Selected Specimens:** **Northern Territory:** 40 miles [64 km] NNW of Creswell Stn, July 1948, *Perry* 1684 (AD, BRI, CANB). **Queensland.** GREGORY NORTH DISTRICT: 89 km N of Bedourie towards Boulia, July 1990, *Milson* JM28 (BRI); 4 km NE Corfield, Apr 1986, *Neldner & Stanley* 2394 (BRI); Site H75, c. 27 km E of Cluny, Sep 1978, *Purdie* 1450 (AD, BRI). GREGORY SOUTH DISTRICT: 58 km E of Monkira, Sep 1989, *Cowan & Bushell* 102 (BRI); Betoota Rd., 50 miles (80 km) Rosebeth Stn, June 1972, *Johnson* S.N. (BRI); Dig Tree, Nappa Merry Stn, Coopers Ck, Mar 1990, *Sandercoe* 4031 (BRI). SOUTH KENNEDY DISTRICT: 2 km N of Natal Downs, May 1991, *Neldner & Thompson* 3122 (BRI); MITCHELL DISTRICT: E of Jericho, Apr 935, *Blake* 10233 (BRI); 5.5 km from Jundah towards Stonehenge, Sep 1989, *Wilson & Pickering* 380 (BRI).

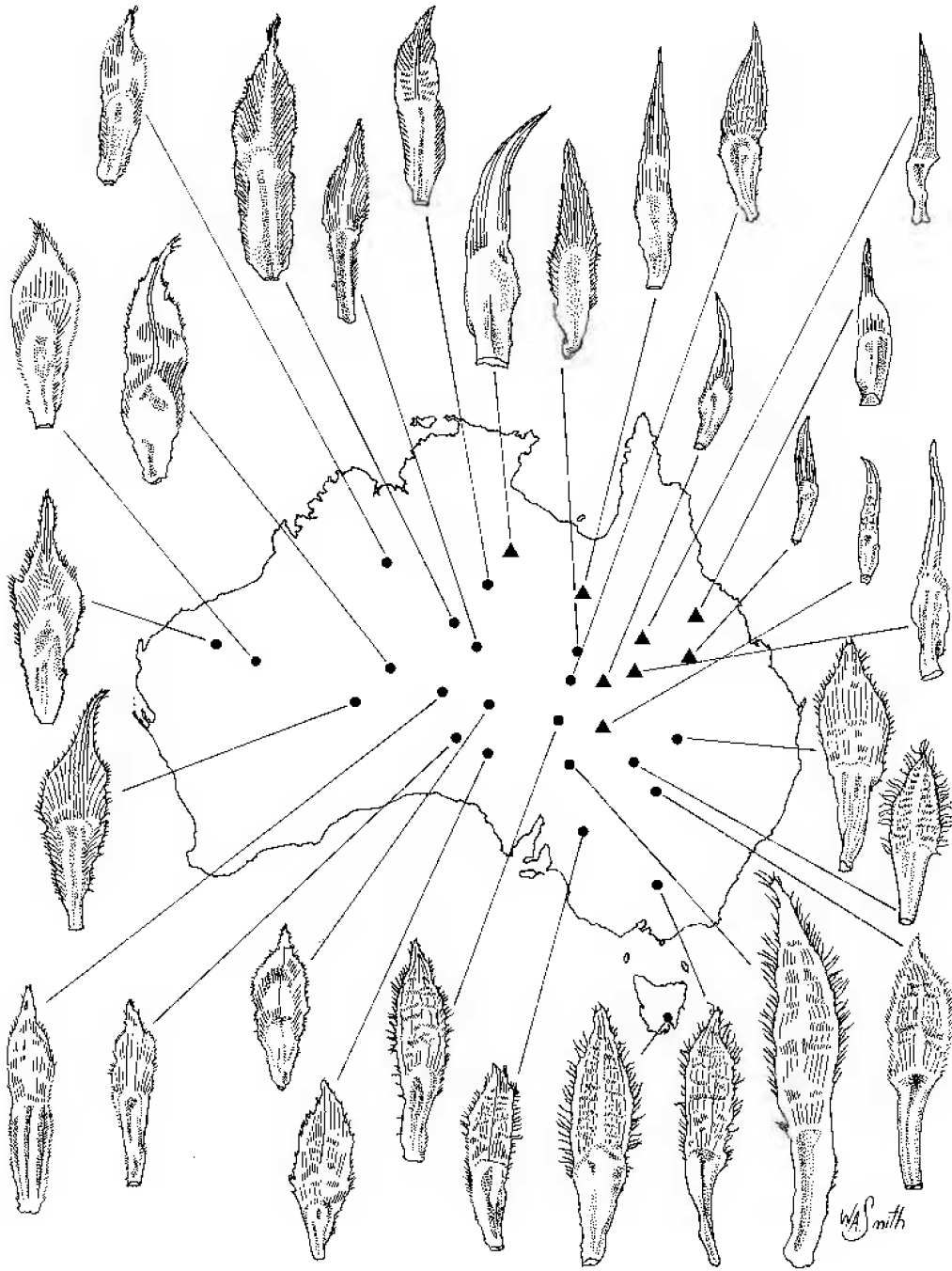
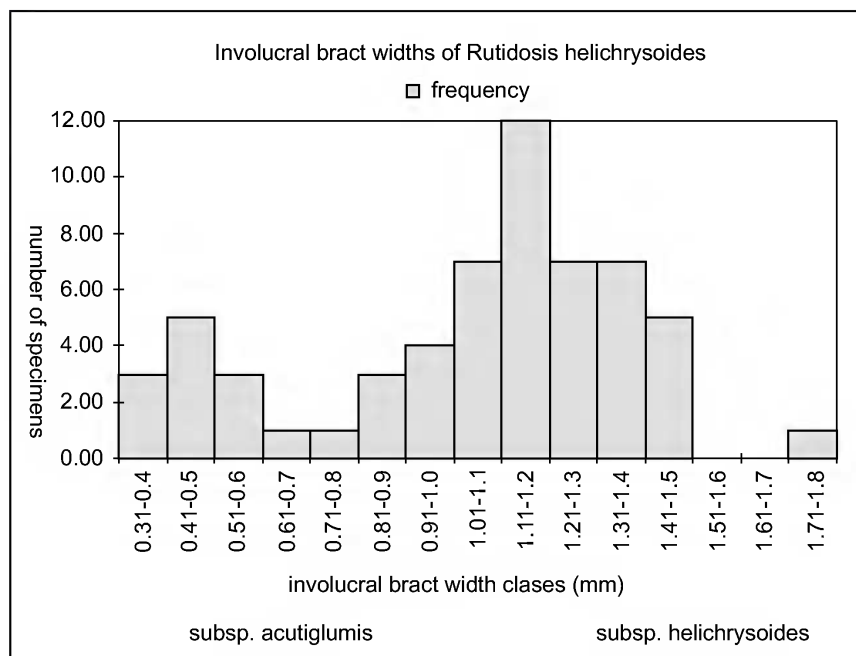


Fig. 2. Variation in involucre bract characters over the geographical range of *R. helichrysoides*, ● *R. helichrysoides* subsp. *helichrysoides*, ▲ *R. helichrysoides* subsp. *acutiglumis*.



**Fig. 3.** Involucre bract widths for 60 specimens of *R. helichrysoides*. The widest bract for each capitulum was measured.

**Distribution and habitat:** *R. helichrysoides* subsp. *acutiglumis* occurs in western Qld and in the north-eastern part of the Northern Territory, in open forest or grassland, in fine sand or clay soil. (Fig. 2)

**Phenology:** Flowers mainly during the cooler months (May to October) depending on rainfall.

**Note:** *R. acutiglumis* Philipson is here recombined as a subspecies of *R. helichrysoides* based on the variation of involucre bract characters across the geographical range of the species (see discussion on variation and figs. 2 & 3).

**Key to the species of *Rutidosia* in Australia**

1. Peduncle scales present; style arms short and truncate; leaves usually linear or narrowly lanceolate to oblanceolate, the margins recurved, revolute or sometimes flat . . . . . 2  
 Peduncle scales absent; style arms long and tapered to a point; leaves usually elliptic or obovate, with flat or wavy margins . . . . . 7
2. Pappus scales entire, obovate, broadly truncate at apex more than 3 mm wide . . . . . **R. helichrysoides**  
 Pappus scales ciliate or irregular, rounded, acute or tapered at apex, less than 3 mm wide . . . . . 3
3. Leaves 1–5 mm wide; corolla 3–5.5 mm long; mostly SE Qld . . . . . 4  
 Leaves less than 2.5 mm wide; corolla 5–7 mm long; NSW only . . . . . 5

4. Plants densely glandular hairy, woolly hairs absent. . . . . **R. glandulosa**  
 Plants woolly hairy or nearly glabrous, glandular hairs absent . . . . . **R. murchisonii**
5. Stems leafy, more than 15 cm high; pappus scales 2–3 mm long, with  
 fimbriate to plumose hairs . . . . . **R. leptorhynchoides**  
 Leaves mostly tufted at base; stems usually less than 15 cm high;  
 pappus scales less than 2 mm long, ciliate with short hairs . . . . . 6
6. Stems glabrous; pappus scales rounded at apex; receptacle 1.8–3 mm diam. . . . . **R. leirolepis**  
 Stems cottony hairy; pappus scales acute at apex; receptacle more  
 than 3 mm diam. . . . . **R. heterogama**
7. Pappus scales obovate, nearly truncate at apex; capitula 14–24 mm  
 diam.; florets white or cream, 4–6 mm long; outer involucre bracts with  
 a distinct dark brown patch at base. . . . . **R. leucantha**  
 Pappus scales linear, acute; capitula 4–16 mm diam.; florets yellow,  
 4–4.5 mm long; outer involucre bracts more uniformly coloured . . . . . 8
8. Leaves 1.2–4.5 cm long, margins usually flat; capitula 8–16 mm diam.,  
 with more than 30 florets; outer involucre bracts woolly hairy. . . . . **R. lanata**  
 Leaves 0.7–2.8 cm long, margins wavy or crisped; capitula 4–10 mm diam.,  
 with less than 22 florets; outer involucre bracts glandular, not woolly hairy . . . . . **R. crispata**

*Note:* *Acomis* is distinguished from *Rutidosia* by the lack of a pappus.

#### Acknowledgements

Thanks to Will Smith for the illustrations, to Peter Bostock for the map and Latin diagnosis, and to the directors of Australian Herbaria for the loan of material.